**Topics for review include:**

1. Introduction and Background
2. Site Inspection and Field Investigations
3. Available Area and Setback Distances
4. LCA Confirmation
5. Cumulative Impacts
6. System Selection and Design
7. Mitigation Measures
8. Site Management Plan
9. Conclusion Summary
10. Site Plan Requirements
11. Appendices

*Report element completed to satisfaction as per requirements*

*Report element provided within report but either information is inaccurate or additional information is required.*

***NA*** *Completion not required as report element is not applicable to the property. It is counted towards the overall report element total count.*

| **Land Capability Assessment Review** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Report Name:** | | | | | | | |
| **Details:** | | | | | | | |
| **Report Element** | **Requirement** | **Reference** | **Priority** | | | | **Comments** |
| **critical** | **relevant** | | **supporting** |  |
| **Relating to Victorian EPA Code of Practice On-site Wastewater Management (Publication 891.4)** | | | | | | | |
| **Relating to Victorian Land Capability Assessment Framework (2014)** | | | | | | | |
| **Relating to Australian/ New Zealand Standard AS/NZS 1547:2012 Onsite Domestic Wastewater Management** | | | | | | | |
| **1. Introduction and Background** | Confirmation if lot is located within a Declared Water Supply Catchment (DWSC); LCA is mandatory if it is. | Section 3.6 |  |  |  | |  |
| Name, contact details and qualifications (insurances) of LCA assessor (author). | Section 3.6 |  |  |  | |  |
| Locality map showing the site in relation to surrounding region. | Stage 12 (a) Section 3.6.1 |  |  |  | |  |
| Current land use and development overview (including occupancy); single lot, subdivision, rezoning, or non-domestic development. | Section 4 |  |  |  | |  |
| Site location (including address and lot details) and owner. | Section 4 |  |  |  | |  |
| Allotment size. | Appendix 3 |  |  |  | |  |
| Proposed/existing water supply. |  |  |  |  | |  |
| Availability of sewer. |  |  |  |  | |  |
| Power source. | Section 4 |  |  |  | |  |
|  | | **Total** | **-** | **-** |  | |  |
| **/ 7** | **/ 2** | **--** | |
| **2. Site Inspection and Field Investigations** | Gather information on relevant Council, Water Corporation, Catchment Management Authority and State Government requirements, including restrictions and caveats on title, and planning/building/bushfire/flood controls, e.g. zones and overlays. Note Environmental Significant Overlays, potable water supply and DWSCs. Impose this information on a base map (or site plan) which shows their location with respect to title boundaries.  *(As a minimum should be documented in report)* | Stage 3 Section 3.6.1 |  |  |  | |  |
| Broad overview of locality and landscape characteristics that may pose a constraint to the sustainable application of wastewater on the site and adjacent land. | Stage 2 Section 3.6.1 |  |  |  | |  |
| * Climate Information (BoM) |  |  |  | |  |
| * Groundwater and groundwater bore information. Location, depth and specified use of groundwater bores on the site and adjacent properties from Water Measurement Information System web database maintained by DELWP <http://data.water.vic.gov.au/monitoring.htm>. Depth to groundwater table in winter (if less than 2.1m deep). |  |  |  | |  |
| Details of date, time and methodology of site inspection and field investigations. | Stage 4 Section 3.6.1 |  |  |  | |  |
| Minimum of two soil test pits or auger holes to a minimum of 1.5m within the identified available effluent management area(s), with additional test pits required for more than one soil type (multiple soil landscapes or facets). | Section 3.6.1 CoP and Section 4.4 Victorian LCA Framework (2014) |  |  |  | |  |
| Site assessment that considers all of the parameters as per Table 1 of the Victorian LCA Framework (2014). Detailed explanation of the level of constraint with regards to DWM and recommended mitigation measures to overcome these constraints. | Table 1 |  |  |  | |  |
| * aspect |  |  |  |  | |  |
| * erosion and landslip |  |  |  |  | |  |
| * fill |  |  |  |  | |  |
| * flooding |  |  |  |  | |  |
| * land suitability |  |  |  |  | |  |
| * landform |  |  |  |  | |  |
| * rock outcrops |  |  |  |  | |  |
| * site drainage (waterlogging) |  |  |  |  | |  |
| * stormwater run-on and runoff |  |  |  |  | |  |
| * slope |  |  |  |  | |  |
| * surface waters |  |  |  |  | |  |
| * vegetation |  |  |  |  | |  |
| Soil assessment that considers the following parameters from Table 2 of the Victorian LCA Framework (2014):  Detailed explanation of the level of constraint with regards to DWM and recommended mitigation measures to overcome these constraints. | 3.6.1 and Table 2 Victorian LCA Framework (2014) |  |  |  | |  |
| * colour and mottling |  |  |  |  | |  |
| * electrical conductivity |  |  |  |  | |  |
| * Emerson Aggregate Class |  |  |  |  | |  |
| * cation exchange capacity (CEC) |  |  |  |  | |  |
| * sodicity (Exchangeable Sodium Percentage ESP) |  |  |  |  | |  |
| * Sodium Absorption Ratio (SAR) |  |  |  |  | |  |
| * permeability and design loading rate to be determined by either the constant-head Soil Permeability method (Appendix G) or field textural method (Appendix E) detailed in *AS/NZS 1547:2012.* |  |  |  |  | |  |
| * pH |  |  |  |  | |  |
| * rock fragments |  |  |  |  | |  |
| * soil depth |  |  |  |  | |  |
| * soil texture (field textural analysis) |  |  |  |  | |  |
| * depth to watertable (if required) |  |  |  |  | |  |
|  | | **Total** | **-** | **-** | **-** | |  |
| **/ 20** | **/ 10** | **/ 2** | |
| **3. Available Area and Setback Distances** | Calculation of available (useable) effluent management area and location on the Site Plan. | Table 5 Section 3.9 |  |  |  | |  |
| Discussion regarding the achievability of the applicable setback distances. Justification required. |  |  |  | |  |
| **4. Cumulative Impacts** | Using the desktop and site assessment information for the site, comment on any possible cumulative detrimental impacts that the development may have on beneficial uses of the surrounding land, surface water and groundwater.  *(Upgrade priority to ‘relevant’ for subdivision applications)* | Stage 5 Section 3.6.1 |  |  |  | |  |
| **5. System Selection and Design** | Design maximum wastewater load (generation rates) and organic load for the proposed development. Number of bedrooms plus one is applied for occupancy rate. Organic Load must be used as key design factor for all non-domestic developments. | Section 3.3, 3.4, Table 4, and Stage 12 (e & f) Section 3.6.1 |  |  |  | |  |
| Target effluent treatment quality. | Stage 7 and 8 Section 3.6.1 |  |  |  | |  |
| Assess the capacity of the land to assimilate the treated wastewater based on the data collected and the total dissolved salts (TDS) in the potable water supply for both levels of effluent quality, primary and secondary. | Stage 6 Section 3.6.1 (refer to Section 2.3.4 or Appendix G) |  |  |  | |  |
| Description and location of applicable DWM treatment system options (refer to EPA website for list of currently approved systems). Pump-out tanks not permitted for new development.  *(As a minimum describe the preferred systems)* | Table 2 and Stage 8 |  |  |  | |  |
| List of effluent land application options and detailed description of preferred option and location as per Code, AS/NZS 1547:2012 and Victorian Land Capability Assessment Framework (2014).  *(As a minimum describe the preferred option and specify location on the site plan. Options discussion required if best-practice method not selected).* | Table 2 and Stage 7 |  |  |  | |  |
| Land Application Sizing. Hydraulic only unless Council require nitrogen nutrient modelling. DIR/DLR applied as per Table 9 EPA Code of Practice. All inputs, results and justification to be shown in the report. Refer to relevant document for specific details. | EPA CoP Stage 7, Table 9, and Section 3.7. |  |  |  | |  |
| Land Application Sizing for subsurface absorption systems (i.e. trenches and beds) should be as per the method (L= Q/DLR x W) described in AS/NZS 1547:2012. Can also use monthly water balance method as per Victorian LCA Framework (2014).  Mounds should be sized as per AS/NZS 1547:2012. | Appendix L (L4.2) and Appendix N. |  |  |  | |  |
| Land application sizing of irrigation areas (surface and subsurface) must undertake a monthly water balance as per Victorian LCA Framework (2014). | Section 4 and Appendix 1 and 2 |  |  |  | |  |
|  | | **Total** | **-** |  | **-** | |  |
| **/ 7** | **--** | **/ 1** | |
| **6. Mitigation Measures** | (If required) Detailed discussion of mitigation measures to overcome any site or soil constraints posed to the sustainable treatment and application of wastewater on-site. This may include the following:   * + Storm water management (i.e. diversion berm, flood mitigation);   + Soil amelioration (i.e. additional topsoil, gypsum application, soil ripping, terracing); and   + Vegetation establishment and management. | Section 4 |  |  |  | |  |
| **7. Site Management Plan** | Description of ways to improve wastewater and DWM system performance for residents’ reference. | Stage 10 and Stage 12 (j) Section 3.6.1 |  |  |  | |  |
| Operation and Management Plan.  *(Required prior to system installation)* |  |  |  | |  |
| **8. Conclusion** | Conclusion summarising all the important design, sizing and mitigation requirements to ensure sustainable on-site DWM. | Appendix 3 |  |  |  | |  |
| **9. Site Plan Requirements** | Site address, including lot number and street number. | Stage 9 Section 3.6.1 |  |  |  | |  |
| All title boundaries. |  |  |  | |  |
| All relevant overlays and/or restrictions (e.g. Council zoning and overlays, including Environmental Significant Overlays and DWSCs). |  |  |  | |  |
| Type of catchment (e.g. potable or other special water supply catchment). |  |  |  | |  |
| North arrow. |  |  |  | |  |
| Contour lines at maximum 1 in 10m intervals.  Direction of slope and grade. |  |  |  | |  |
| Location of soil test pits or auger holes. |  |  |  | |  |
| Location of any significant site features e.g. rock outcrops or waterlogged regions. |  |  |  | |  |
| Location of intermittent and permanent surface waterways (dams, creeks, reservoirs and springs). | NA |  |  | |  |
| Location of 1% and 5% Annual Exceedance Probability flood level contours (if applicable). |  | NA |  | |  |
| Location of groundwater bores on the site and adjacent properties. |  | NA |  | |  |
| Vegetation cover (can use aerial image as base map). |  |  |  | |  |
| Relevant setback distances as per Table 5 EPA Code of Practice. |  |  |  | |  |
| Location of existing and proposed buildings, sheds, driveways, paths and any other improvements. |  |  |  | |  |
| Available effluent management area(s). |  |  |  | |  |
| Location of proposed land application area (sized to scale). |  |  |  | |  |
| Location of proposed stormwater cut-off drains adjacent to the land application area. |  |  |  | |  |
| Location of proposed DWM system (nominal). |  |  |  | |  |
| Location of reserve land application area (sized to scale).  *A reserve LAA is not required for surface or subsurface irrigation systems sized using Victorian LCA Framework (2014) water balance method and DIR values Table 9 EPA Code of Practice, unless Council deem necessary due to increased site risks.* |  |  |  | |  |
|  | | **Total** | **-** | **-** |  | |  |
| **/ 9** | **/ 10** | **--** | |
| **10. Appendices** | Site Plan | Stage 9 and 12 (b) Section 3.6.1 |  |  |  | |  |
| Soil bore logs for all test pits or auger holes | Stage 9 (i) Section 3.6.1 |  |  |  | |  |
| Certificate of Title(s) for lot (plan) | Stage 12 (c) Section 3.6.1 |  |  |  | |  |
| Proposed building plans | Stage 12 (d) Section 3.6.1 |  |  | NA | |  |
| Planning Permit application number reference (where applicable) | Section 3.6.1 |  |  |  | |  |
| Septic Tank Permit application | Section 3.6.1 |  |  |  | |  |
| Copy of the water (hydraulic) balance calculations as required.  *(where relevant)* | Stage 12 (g) Section 3.6.1 |  |  |  | |  |
| Copy of the nutrient balance calculations as required.  *(where relevant)* | Stage 12 (h) Section 3.6.1 | NA |  |  | |  |
|  | | **Total** | **-** |  | **-** | |  |
| **/ 6** | **--** | **/ 2** | |  |
| **Additional Comments:** | | | | | | | |
|  | | | | | | | |